

# Industry Must Boost Precision Agriculture

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**P**recision agriculture is an approach where improved inputs and agricultural practices are used in precise manner to make every aspect of agriculture profitable and sustainable.

#### **Avenues of Precision Agriculture by Jain Irrigation**

We have pioneered several new concepts and practices for multiple crops which helped to change the way agriculture is done today. On the output side, we provide better market linkages to the farmers and also buy back and process fruits, spices, onions and vegetables. We are also in financing through our microfinance company - Safal. Our prime focus is to enable the farmers for better utilization of technology to increase remuneration and profitability per acre. Some of our interventions in precision agriculture are discussed below.

#### **Precision in Planting Material- Tissue Culture**

Jain Irrigation is situated in Banana bowl of the country, Jalgaon district of Maharashtra, where about 14% of the country's Banana is produced. Yields of conventional varieties were low, also it was highly perishable and not gaining much export value. After extensive research, we have first introduced a specially selected variety called Grand Nain. This tissue cultured variety has replaced the century old practice of Rizom/ sucker planting. We added value to it by working a precise irrigation and fertigation schedule to be applied through drip irrigation. This helped the farmer to harvest 3 crops in 30 months as against 2 crops in 36 months for conventional banana varieties. We ensure disease free and uniform plants,

standardize the package of practices. As a result we revolutionized the Banana Production System - Long finger length, more caliper and spotless lustrous banana, increased bunch weight from average 9 kg to 30 kg. We helped the farmer to revamp the mat & bunch management, making it export feasible. This resulted in enhanced income of banana growers by many folds.

Jain Irrigation has introduced tissue culture for many other crops like pomegranate, strawberry, potato, coffee etc.

#### **Improved Irrigation Inputs**

Drip irrigation is an important tool to achieve precision in irrigation. It ensures that water is directly applied to the root zone rather than irrigating the entire land. It ensures water saving more than 50% while yield increases more than 100% for most of the crops. It saves labor, energy and fertilizers which are crucial inputs in agriculture. Jain irrigation has pioneered the concept of drip irrigation in India.

Although with conventional drip irrigation uniformity of water distribution is fairly achieved (up to 90%) still there is some loss due to hydraulic constraints of the system design. Jain Irrigation has introduced a pressure compensated (PC) dripper and dripline which overcomes the hydraulic and topographical limitations and improves water distribution efficiency up as high as 98%. Moreover, uniform distribution of fertilizers can also be achieved with PC dripper which is an important step towards precision agriculture. We worked extensively for subsurface application of



drip irrigation for crop like sugarcane. To overcome the issue of soil suction due to siphoning and intrusion of roots inside the dripper, we have introduced Anti Siphon dripper and also introduced a dripper variant having root intrusion deterrent. Application of subsurface drip irrigation facilitated the use of mechanical harvesting for Sugarcane.

**Digital-Tech Solution - Jain Logic:**

To make irrigation more precise, we have introduced a digital-tech platform “Jain Logic”. Jain Logic is an amalgam of Digital - Tech Solutions created to fulfill precision agriculture and irrigation management requirements. It includes monitoring and control devices, software applications and real time analytical intelligence and prediction analysis for decision support system.

**Working of Jain Logic:** Irrigation decision tools boil down to two key questions: “when and how much?”. An irrigator wants to know when to irrigate and how much irrigation to apply to the crop.

**Jain Irricare - Precision Farming Solution for Large Community Irrigation Projects**

Jain Irrigation has come with a pathbreaking concept of “Resource To Root” in which water is distributed from reservoir till every plant through a network of closed conduits integrated with drip irrigation system. This revolutionary concept helped to increase water use efficiency to 90%. To control and monitor such a large distribution network remotely and to ensure every farmer within the command area gets his share of water, we came up with a unique IOT based Irrigation Management System - **Jain Irricare**.

We all know that if farmers prosper, the entire industry will prosper. There are traditional ways to increase farmers income which we all are doing, but some factors which really affect his income and which are beyond his control like climate vagaries, pest attack, untimely rain, drought situations, market fluctuations etc. Industry shall focus on alleviating all these issues to boost the agricultural economy. While doing so care shall be taken that any technological interventions, solutions shall be thoroughly studied well before it reaches to the end user, farmer. No half baked product shall reach the farmers. At Jain Irrigation, we strive hard to deliver the solution which will increase the farmers income by increasing yield, decreasing the input cost and at the same time technology shall be environmentally friendly and sustainable.

